

Systems and Methods for Millimeter and Sub-Millimeter Wave Imaging

ABSTRACT

In one aspect, the present invention provides an apparatus 10 for imaging. At least one source 12 (or 12/14) of composite radiation illuminates a field of view 16. The radiation includes a set of multiple phase-independent partials that are independently controllable and exhibit distinct physical features. A quasi-optical element 21 is disposed between the field of view 16 and a multi-element receiver 18. The multi-element receiver 18 is disposed to receive image radiation 28 from the quasi-optical element 21. Particular ones of the receiver elements transform the image radiation 28 into a set of electrical signals that include information relating to features of the partials.